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ABSTRACT

This paper examines the arbitrary distinctions between intentional and unintentional child injuries, noting that a careful review of the literature of both child abuse and unintentional child injury revealed similarities among the risk factors associated with the two outcomes. A single, multifactor model of injury etiology, the ecologic model, is described, providing a framework for systematically comparing risk factors for abuse with those for unintentional injuries. The etiology of childhood injury is examined in an ecological context, making possible a unified approach to prevention of many kinds of intentional and unintentional child injuries. While the model is described as useful in bringing together research on child abuse and research on unintentional child injuries, it is noted that the social responses to abuse on the one hand and to unintentional injuries on the other remain very different. Individual, familial, social, and cultural factors in childhood injury are identified and the role of social support and social networks is explored. Because the ecological model postulates that life events, chronic stressors, and perceived stress immediately precede an injury event, whether intentional or unintentional, stress and life events are considered in the context of their universality in both types of injury. Implications for prevention and treatment are discussed, and a list of 109 references is appended. (Author/NB)

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BUREAUCRATIC ABUSE AND THE FALSE DICHOTOMY BETWEEN INTENTIONAL AND UNINTENTIONAL CHILD INJURIES

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ABSTRACT

An examination of research into risk factors for other intentional or unintentional child injuries reveals a number of similarities. A single, multifactor model of injury etiology, the ecologic model, provides a framework for systematically comparing risk factors for abuse with those for unintentional injuries. Despite the usefulness of the model in bringing together the two streams of research, the social responses to abuse on the one hand and to unintentional injuries on the other remain very different. Two separate bureaucracies, one of which emphasizes assignment of blame and the other of which accepts the premise that most unintentional injuries are "accidental," present barriers to primary prevention of either abuse or unintentional injury among children.

BUREAUCRATIC ABUSE AND THE FALSE DICHOTOMY BETWEEN INTENTIONAL AND UNINTENTIONAL CHILD INJURIES

INTRODUCTION

This paper examines the arbitrary distinction between intentional and unintentional child injuries. After a careful review of the literatures of both child abuse and unintentional child injury, we have been struck with the similarities among the risk factors associated with the two outcomes. The continuing dichotomy, however, has spawned not only two distinct academic schools of thought, but distinct bureaucracies for dealing with the problems. The real victim in this schism is primary prevention, which is ultimately achievable through interventions which address risk factors. If in fact there are similarities among the risk factors for the two types of injuries, then it follows that there may be similar strategies for prevention. Yet, with two distinct constituencies involved, efforts at prevention may be inefficient at best, or even hampered. By examining the etiology of childhood injury in an ecological context, a unified approach to prevention of many kinds of child injuries, both intentional and unintentional, is possible.

New interest in the prevention of unintentional injuries in childhood has resulted from an appreciation of the morbidity and mortality burden experienced by children as a result of such injuries. There is now a consensus that

injuries constitute the most severe health problem faced by young children in this country (1,2). Injuries are responsible for more deaths among children aged one to fifteen than the combined total of the next six leading pediatric disorders (3). The home is the locus for most childhood injuries (4). Over 90% of all injuries to children up to age four occur in and around the home (5), and, of fatal injuries to this age group, more than 50% occur in or close to the home (3).

Both Rivara (6) and Berger (7) emphasize that injury research efforts should focus on the prevention of household injuries to infants and toddlers. Young children, it is said, are deserving of attention because they lack the cognitive and motor abilities to avoid environmental hazards (7,8). In addition, the economic costs of injuries to this population are severe both in terms of interference with normal development and lost opportunities for education. Rivara (6) points out that while the direct costs associated with childhood injuries are substantial, they are dwarfed by the indirect costs caused by resulting disabling conditions.

Child abuse and neglect together constitute a major cause of childhood injury. Approximately 10.7% of children in a national sample are at significant annual risk of exposure to severe acts of parent to child violence (9). Extrapolating from the results of a second study (10), acts

of child neglect likely to result in serious injury or in the exacerbation or prolongation of injury may add an additional 3 or 4% to this figure.

That intentional and unintentional injuries are often mistaken one for the other is one example of evidence that the two overlap. Pediatric house officers are trained to recognize suspicious injuries which masquerade as so-called "accidents". Depending upon your vantage point, this is called fostering a low threshold or a high index of suspicion. TABLE 1 lists injuries highly suggestive of child abuse.

[INSERT TABLE 1 HERE]

Instead of focusing on the nature of the injury, our approach looks at etiology according to an ecological model which accommodates both intentional and unintentional injuries. This model is derived from Garbarino (11) and Belsky (12) who have proposed an ecological approach to understanding child maltreatment. The model attempts to consolidate single factor theories of causation, such as the psychopathological and the social determinant models, into a single, multifactorial schema. As elaborated by Howze and Kotch (13), the ecological model postulates that individual, family, social and cultural variables interact with such factors as life events and stress to create conditions conducive to child abuse and neglect. Central to this model

is the proposition that, in the absence of supportive networks, the demands of daily living and/or the acute crises of the life cycle may combine with risks present in the above-mentioned categories to lead to child maltreatment. This model (FIG. 1) provides a conceptual framework for integrating two largely disparate literatures concerning the etiologies of child injuries and child maltreatment. While support for the inclusion of both kinds of injuries in this model is derived from the findings discussed below, gaps in our knowledge of the relationship between some risk factors and social support and social networks remain.

[INSERT FIG.1 HERE]

INDIVIDUAL AND FAMILIAL FACTORS

A look at the risk factors in the individual category indicates that these are surprisingly similar for both intentional and unintentional injuries (Table 2). Researchers have suggested that characteristics of both children and their parents may contribute to child maltreatment. Child factors include prematurity (14, 15), congenital abnormalities (16-18), and the child's own behavior (19), disposition (20,21), and development (22). It has also been pointed out that the infant's temperament may influence child maltreatment (23). In this regard, Butterfield and his associates (24) reported that motor

activity, responsiveness, ease of arousal and state of organization were predictive of hostile parenting during first year of life.

[INSERT TABLE 2 HERE]

It is widely agreed that unintentional childhood injuries are also influenced by the child's individual motor, cognitive, behavioral, and developmental characteristics (7, 8, 25) as well as by aggressive behavior (26-28). One study of nearly 5000 infants of both normal and low birth weight (29) found that children's rates of injuries increased substantially during their first year, consistent with their attainment of independent mobility. In a study of injury repeaters aged 4 though 18 (30), a relationship was found between injury liability and a variety of behavioral characteristics indicative both of increased exposure to hazards and of reduced self-control to cope with hazards. A recent study of the social and behavioral characteristics of 12,000 five-year-old children (25) found a similar association, even when controlling for social class, crowding, and maternal psychological distress, age, and marital status. In Matheny's (31) longitudinal study of 116 toddlers, those who were most easy to manage were least likely to suffer injuries. While numerous studies have found that children's aggressive behavior is significantly related to a variety of unintentional injuries (8, 26-28, 30-36), some have not (37-39).

Descriptions of individual factors attributed to perpetrators involved in child maltreatment are legion, beginning with Kempe's (40) initial observations that perpetrators of abuse are immature, impulsive, self-centered and quick to react. Other researchers have characterized abusive parents as lacking self-esteem and having no sense of self-worth (41-45). One characteristic that has repeatedly been found to be associated with child maltreatment is the mother's own history of rejection (46) and of family violence, physical abuse or sexual abuse as a child (20, 47-52). These reports are suggestive of the intergenerational transmission of family violence, although this observation has recently been called into question (53).

Morbidity (54), psychosomatic symptoms (55, 56) and depression are also used in connection with the abusive parent. Steele and Pollock (48) found that abusing parents were depressed, but noted that only a handful of such parents could be described as clinically depressed. Instead, they found that the majority of abusive and neglectful parents reported that they tend to feel depressed at one time or another. A recent study (43) concluded that abusive mothers showed a tendency to be apathetic and depressed.

Maternal depression has also been linked with unintentional childhood injury. In a random sample of 458

women, it was found that the presence of a psychiatric disorder in the women greatly increased the risk of unintentional childhood injuries (57). The authors suggest that this relationship may be due to more than inadequate supervision; it may be caused by an increase in irritability or attenuated interest in the child's welfare. More recently, Matheny (58) has linked injuries to emotional instability, inactivity, and lack of energy.

Current violence toward the mother may be a causal factor in both intentional and unintentional childhood injuries. Straus, Gelles, and Steinmetz (59) found higher rates of child abuse in homes where spouse abuse occurred. In a clinical sample of 60 battered women, Hilberman and Munson (60) found that one-third of the children were physically or sexually abused. They also found a high incidence of somatic, psychological, and behavioral dysfunctions in the women and the children, even in children who were not being physically or sexually abused. Current violence against the mother may lead to fear-induced child behaviors that make her children more demanding and thus more vulnerable either to aggressive acts or to distancing behaviors of caregivers that limit the protective supervision that small children need. Alternatively, aggression against the mother may result in anxiety and depression, rendering her less capable of providing sensitive caregiving (60). Unfortunately, the prevailing practice of studying child abuse and spouse abuse as

discrete phenomena rather than studying these aspects of family violence simultaneously has led to fragmentation in our knowledge base and to limits in our understanding of how violence against one member of the family results in intentional injuries toward another member of the family. In addition, the potential link between violence toward the mother and unintentional injuries in children has been undeservedly ignored.

Moving on to familial factors, both the child abuse literature and the injury literature have cited single parenthood (39, 61, 62) and marital problems such as marital violence (39, 60) in associaion with their respective outcomes of interest.

SOCIAL AND CULTURAL FACTORS

Perhaps more compelling are the links between socioeconomic status (SES) and both intentional and unintentional injuries. Childhood injury rates have frequently been associated with education (58) and with socio-economic status (58, 63-70), although that association is by no means universally reported (26, 29, 71). It has been suggested that SES may affect injury rates through such mediating factors as the physical neighborhood, the home environment, and the effect of poverty on hunger, family stress, and parents' attentiveness to their children (2, 7). Social class as reflected by income has been found to be

associated with child maltreatment. In fact, some researchers contend that child maltreatment of all types occurs more often in lower socio-economic classes (9, 72). Gelles (9) notes that families below the poverty line have rates of child abuse which exceed by a factor of two those of families making $25,000 or more a year. However, as other researchers have noted, not all poor families abuse their children, and abuse can be found in affluent families.

Finally, there may be some similarities between cultural beliefs and values associated with the two kinds of injuries. In the case of child maltreatment, attention has been paid to perceptions of cultural values that sanction corporal punishment (73, 74) and to inappropriate child development expectations (75). The extent to which these may be associated with cultural beliefs which reinforce the notion that injuries are acts of God or simply a consequence of fate are unexplored (76).

SOCIAL SUPPORT AND SOCIAL NETWORKS

That social support may be a mediating factor in the etiology of child maltreatment has been demonstrated by research showing that abusive and neglectful families are isolated from formal and informal support systems (77, 78). Social support may affect such parental factors as physical and psychological health (79, 80), maternal punitiveness (81), and the home stimulation of infants (82). It is

hypothesized that among the most critical sources of social support for parents is a close confiding relationship with an intimate, especially a spouse or partner (49, 83-86). Other sources of support, particularly from relatives and close friends, may also significantly affect parent-child relations (86, 87). The link between social support and social networks on the one hand and childhood injuries on the other is less well established. However, there is some limited evidence that parents of children with histories of repeated injuries tend to be socially isolated (39). At best, these relationships must be considered tentative, since at least one study has failed to find such a relationship (88).

STRESS AND LIFE EVENTS

Lastly, the ecological model postulates that life events, chronic stressors, and perceived stress immediately precede an injury event, be it intentional or, in many cases, unintentional.

Many studies have noted that factors related to stress have often been associated with the incidence of unintentional childhood injuries. These include stress-inducing life events such as marital conflict (39), poor marital relationships (37, 89), single parenthood (8, 39, 88), financial difficulties, and disability and death (90). Stressful life events have been linked empirically to

unintentional injuries, burns, and poisonings by a large number of researchers (8, 26, 91-95), but not by all (39). In one case-control study (95), 50 children treated for burns were matched with 41 healthy children on social class, ethnic background, age, and sex. The authors found that the parents of the burned children tended to be more preoccupied with any of a series of family problems, such as illness, unemployment, pregnancy, housing, finance, and concerns over the child or siblings. In a study by Padilla (91) boys of junior high school age were rated as to the number of their stressful life changes. Boys with many life changes were much more likely to be injured ($p<.005$). In a major prospective study of a birth cohort of 1082 children from ages one to four, family life events were found to be associated with medical consultation and hospital attendance and admission for burns, scalds, and unintentional poisoning (37). This association persisted ($p<.0001$) even when the researchers controlled for a variety of familial socio-demographic factors, including maternal age, ethnic status, education, and family size and standard of living.

The strength of this effect has been variously interpreted. It has been suggested that familial stress may decrease the ability of the mother to cope which may, in turn, decrease her vigilance over her children and thus increase their risk of injury (37, 90, 91, 94). For the same reason, she may actually increase environmental hazards by not correctly storing potentially injurious household

items (90, 93). Alternately, children's own behavior may change (93). They may be preoccupied with these stressful life events and thus may fail to attend adequately to hazards in their environment (91, 94). It has also been proposed that children under stress may be manifesting behavior designed to get attention (91, 94) or to reduce their parents' preoccupation with other family problems (90).

Child maltreatment has also been linked to various sources of stress, including single parenthood (62) and marital discord (20, 59). Stress has been posited as an antecedent variable that may explain the link between depression and child abuse (96, 97) and that may also induce child behavioral problems (98, 99). Borrowing from research on stress and physical and mental health, child abuse and neglect researchers have found life events to be associated with child maltreatment (100-103). Recently emphasis has been paid to the effects of mental health and daily stressors, as opposed to more major life events (96, 104, 105).

IMPLICATIONS FOR PREVENTION AND TREATMENT

The above observations linking the risk factors associated with both intentional and unintentional injuries have only become possible recently because of the proliferation of studies of injuries in the last two decades. Prior to the mid-1960's, neither child abuse nor

"accidents" received much attention from health professionals. Child abuse was in the social welfare domain, and "accidents" were the preoccupation of the safety establishment. Despite the absence of a conspicuous medical role in child abuse, the welfare model emphasized diagnosis and treatment, whereas the safety constituency has concerned itself from the outset with prevention.

Coincidentally, both kinds of injury came to the attention of the health community at about the same time, with Kempe's (40) influential article in the Journal of the American Medical Association which introduced the term, "battered child," and with the American Public Health Association publication, Accident Prevention (106). Yet, the child abuse constituency continued to be constrained by a treatment model which diverted attention from prevention. The safety establishment on the other hand seemed to welcome their medical allies and the development of emergency medical service systems including the regionalization of trauma centers. However, this marriage didn't make all of the injury prevention advocates comfortable with many of the injuries their emergency room colleagues were seeing. The State Child Injury Prevention Project (SCIPP) in Massachusetts, for example, didn't publish any homicide or suicide data in its report of emergency room surveillance (107). This may be related to a natural disinclination to get involved with crime, the police, or the courts, where child abuse specialists spend a lot of their time. It seems

that many efforts at prevention could benefit from the joint efforts of both the intentional and the unintentional injury constituencies to address similar risk factors. There are some environmental risk factors which are common to both. Handguns are an obvious example. Four hundred children shoot themselves every year (108). At the same time, about 1,000 abused children die each year, some of them of bullet wounds (109). It seems natural that child abuse prevention advocates and injury prevention advocates should work together to regulate the availability and distribution of handguns.

Paradoxically, it may be the child victim of an unintentional injury who is deprived of important follow-up services as a consequence of the lingering dichotomy. By definition, a childhood injury that is classified as "unintentional" in nature absolves the child's parents from any conscious or willful responsibility for the injury. The classification implies that if the parents could have foreseen the injury, they would have taken measures to prevent it. The injury is thus perceived to have occurred by chance, or its causes are thought to reside in the physical environment, perhaps in conjunction with physical, social or psychological characteristics of the injured child. If the injury is thought to be a true "accident," the child is treated medically for the consequences of the injury and released, under the assumption that he or she is at no increased risk of a repeated injury. If the cause of

the injury is ascribed to some persistent hazard in the environment, the parents may be advised to take precautions to protect the child by removing the hazard or keeping the child away from it. Generally speaking, the advice is delivered by the medical provider while attending to the medical needs of the child; there is usually no follow-up to determine the impact of that advice.

On the other hand, the cause of an injury that is labeled "intentional" is attributed directly to a conscious and deliberate act of parental commission or omission. That is, the cause of the injury may be traced directly back to some action which the parent(s) purposefully took, or failed to take. These parents are then suspected of having committed an act of abuse or neglect, and the consequences of such a label may be far-reaching. If the parents are reported to a child protective services agency, as is required by law in all states, the family is subjected to an investigation to determine whether the report should be substantiated. Such an investigation may become known to the family's friends and neighbors, and the parents may then be stigmatized regardless of the investigation's outcome. If the investigation substantiates the report, the child then receives protective services. Under the best of circumstances, these services often take the twin forms of counseling for the parents and periodic inspection of the child and home. Such counseling is usually focused on child management behaviors, but may include social services

designed to identify needed supports and resources for the family. In some cases, parents who are deemed resistant to protective services investigation, or whose child is thought to be at significant risk of repeated injury, may be involved in legal proceedings. In relatively rare cases, the child may be physically removed from the home. Clearly, child protective services may be highly invasive and disruptive to family functioning.

The complex and interactive nature of psychological, social, and environmental factors in the etiology of childhood injuries suggests that societal response to such injuries may be significantly inadequate, regardless of whether such injuries are labeled as intentional or unintentional in origin. If the injury is thought to be unintentional, generally no attention is directed towards determining and ameliorating factors relating to stress and social support that may be implicated in the injury and that may place the child at increased risk of future injuries. If the injury is labelled intentional, not only does the overextended child protective services agency lack sufficient resources to provide the continuing, labor intensive services necessary to reduce familial stress, but the intervention itself may substantially increase the burden of stress that is already on the family. Furthermore, it seems plausible that the stigma attached to the label may have an adverse impact on the family's network

of social relationships. It would thus seem that the intervention may have an iatrogenic effect, exacerbating the very conditions that it seeks to ameliorate.

The need is thus apparent for a broader, more humane, and more effective societal strategy to respond to childhood injuries. Such a strategy should, for a start, recognize the evident likelihood that individual, family, social, and cultural characteristics may contribute to many intentional and unintentional childhood injuries. It should emphasize the need for research to compare the etiologies of injuries labeled as intentional and unintentional, to examine the extent to which such characteristics are implicated in injuries, and to determine which child populations are at significantly elevated risk of injury. This information is crucial to the prevention of injury via reduction of both physical and social risks. In the case of services for injuries that will undoubtedly continue to occur, medical providers should routinely address the reduction of risk of future injury as an integral part of the provision of medical services. Finally, the obliteration of the distinction, for treatment purposes, between intentional and unintentional injuries can facilitate family acceptance of the intervention free of the label of parental intentionality and without its attendant stigma.

It seems clear that there will always be a need for child protective services, because there will always be families which decline, or are unable, to alter the situations which give rise to childhood injuries. However, to the extent that the psychological, social, and environmental causes of such injuries are seen to be and are treated as universal, and to the extent that the label of parental intention is seen to be without true merit, the acceptability and effectiveness of protective services should increase commensurately.

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TABLE 1

INJURIES HIGHLY SUGGESTIVE OF CHILD ABUSE

SKELETAL AND CRANIAL INJURIES

Metaphyseal and epiphyseal injuries
Spiral fractures
Skull fracture
Multiple fractures
Rib fracture
Subdural hematomas

OCULAR INJURY

Conjunctival and retinal hemorrhage

CUTANEOUS INJURIES

Human bites
Bruises to face and buttocks
Bruises or lacerations caused by looped cord, belt, stick or hand
Immersion burns
Cigarette burns
Genital trauma
Bilateral injuries
Circumferential injuries (wrists, ankles or neck)
Multiple bruises or other lesions

INTERNAL INJURIES

Abdominal injuries (tears, ruptures,
or hematomas of the viscera)
Water inhalation

OTHER

Munchausen by proxy
Drug injestion

TABLE 2

INJURY RISK FACTORS TO CHILDREN

	CHILD MALTREATMENT	UNINTENTIONAL INJURY
	PREDISPOSING	
INDIVIDUAL	Prematurity Congenital anomalies Neonatal illness	Disability
	Child behavior Child development	Aggressive Behavior Cognitive & developmental characteristics
	Disposition/temperament	Temperament
	Mo's history Maternal illness Maternal depression	Maternal emotional instability, inactivity, lack of energy
	Maternal low self-esteem	Maternal psychiatric disorders
	Parental abuse of drugs and alcohol	
SOCIAL FAMILY	Single parenthood Marital violence Unemployment	Single parenthood marital conflict
	SES	SES Unemployment
CULTURAL	Cultural beliefs and values re: corporal punishment Attitudes about parenting and beliefs about child development	Cultural beliefs re: fate
	MEDIATING	
	Social support Social isolation	Social isolation
	PRECIPITATING	
	Chronic stressors: Marital discord	chronic stressors such as: marital discord financial difficulties
	Acute life events	Acute life events such as: death unemployment illness

FIGURE 1

ECOLOGIC MODEL